

## REQUEST

International Application No.	
International Filing Date	

The undersigned requests that the present international application be processed according to the Patent Cooperation Treaty. Applicant's or agent's file reference 56954 PCT (if desired) (12 characters maximum) Box No. I TITLE OF INVENTION **DETECTION AND QUANTIFICATION OF MODIFIED PROTEINS** Box No. II APPLICANT This person is also inventor Telephone No. Name and address: (Family name followed by given name; for a legal entity, full official designation. The address must include postal code and name of country. The country of the address indicated in this (617) 432-0923 Box is the applicant's State (that is, country) of residence if no State of residence is indicated below.) President and Fellows of Harvard College Facsimile No. 17 Quincy Street (617) 432-2788 Cambridge, Massachusetts 02138 Teleprinter No. US Applicant's registration No. with the Office State (that is, country) of nationality: State (that is, country) of residence: This person is applicant all designated all designated States except the United States the States indicated in for the purposes of: States the United States of America of America only the Supplemental Box FURTHER APPLICANT(S) AND/OR (FURTHER) INVENTOR(S) Box No. III Name and address: (Family name followed by given name; for a legal entity, full official designation. This person is: The address must include postal code and name of country. The country of the address indicated in this applicant only Box is the applicant's State (that is, country) of residence if no State of residence is indicated below.) Gygi, Steven P. applicant and inventor 4 Stockbridge road Foxboro, Massachusetts 02035 inventor only (If this check-box is marked, do not fill in below.) Applicant's registration No. with the Office State (that is, country) of nationality: State (that is, country) of residence: US the States indicated in the Supplemental Box This person is applicant for the purposes of: all designated States except the United States of America all designated the United States of America only States Further applicants and/or (further) inventors are indicated on a continuation sheet. Box No. IV AGENT OR COMMON REPRESENTATIVE; OR ADDRESS FOR CORRESPONDENCE The person identified below is hereby/has been appointed to act on behalf agent common representative of the applicant(s) before the competent International Authorities as: Name and address: (Family name followed by given name; for a legal entity, full official designation. Telephone No. The address must include postal code and name of country.) (617) 439-4444 Rees, Ph.D., Dianne M. Facsimile No. Edwards & Angell, LLP P.O. Box 9169 (617) 439-4170 Boston, Massachusetts 02209 Teleprinter No. Agent's registration No. with the Office Address for correspondence: Mark this check-box where no agent or common representative is/has been appointed and the space above is used instead to indicate a special address to which correspondence should be sent.

Form PCT/RO/101 (first sheet) (March 2001; reprint January 2003) LegalStar 2003, Form PCTREQ

See Notes to the request form

Continuation of Box No. III RTHER APPLICANTS AND/OR (FURTHER VVENTOR(S)						
If none of the following sub-boxes is used, this sheet should not to be included in the request.						
Name and address: (Family name followed by given name; for a legal entity, fu The address must include postal code and name of country. The country of the add Box is the applicant's State (that is, country) of residence if no State of residence is Junmin, Peng 32 Perthshire Road, Apt. 1 Brighton, Massachusetts 02135 US	This person is:  applicant only  applicant and inventor  inventor only (If this check-box is marked, do not fill in below.)  Applicant's registration No. with the Office					
State (that is, country) of nationality: US China	State (that is, count US	ry) of residence:				
This person is applicant all designated for the purposes of:  all designated the United St	States except ates of America	the United States the States indicated in of America only the Supplemental Box				
Name and address: (Family name followed by given name; for a legal entity, fu. The address must include postal code and name of country. The country of the addi Box is the applicant's State (that is, country) of residence if no State of residence is to	ress indicated in this	This person is:  applicant only applicant and inventor inventor only (If this check-box is marked, do not fill in below.)  Applicant's registration No. with the Office				
State (that is, country) of nationality:  State (that is, country) of residence:						
This person is applicant all designated all designated States except the United States the States indicated in for the purposes of:  all designated States except the United States of America only the Supplemental Box						
Name and address: (Family name followed by given name; for a legal entity, ful The address must include postal code and name of country. The country of the addr Box is the applicant's State (that is, country) of residence if no State of residence is i	ress indicated in this	This person is:  applicant only applicant and inventor inventor only (If this check-box is marked, do not fill in below.)  Applicant's registration No. with the Office				
State (that is, country) of nationality:	State (that is, count	ry) of residence:				
	States except ates of America	the United States the States indicated in of America only the Supplemental Box				
Name and address: (Family name followed by given name; for a legal entity, ful The address must include postal code and name of country. The country of the addr Box is the applicant's State (that is, country) of residence if no State of residence is i	ess indicated in this	This person is:  applicant only applicant and inventor inventor only (If this check-box is marked, do not fill in below.)  Applicant's registration No. with the Office				
State (that is, country) of nationality:	State (that is, countr	y) of residence:				
This person is applicant all designated all designated for the purposes of: all designated the United States		the United States  the States indicated in the Supplemental Box				
Further applicants and/or (further) inventors are indicated on another continuation sheet.						

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Sheet No. . . . 3. . . least one must be marked. Box No.V DESIGNATION d TES Mark the applicable check-boxes bel The following designations are hereby made under Rule 4.9(a): Regional Patent ARIPO Patent: GH Ghana, GM Gambia, KE Kenya, LS Lesotho, MW Malawi, MZ Mozambique, SD Sudan, SL Sierra Leone, SZ Swaziland, TZ United Republic of Tanzania, UG Uganda, ZM Zambia, ZW Zimbabwe, and any other State which is a Contracting State of the Harare Protocol and of the PCT (if other kind of protection or treatment desired. specify on dotted line) Eurasian Patent: AM Armenia, AZ Azerbaijan, BY Belarus, KG Kyrgyzstan, KZ Kazakhstan, MD Republic of Moldova, RU Russian Federation, TJ Tajikistan, TM Turkmenistan, and any other State which is a Contracting State of **⊠** EA European Patent: AT Austria, BE Belgium, BG Bulgaria, CH & LI Switzerland and Liechtenstein, CY Cyprus, CZ Czech Republic, DE Germany, DK Denmark, EE Estonia, ES Spain, FI Finland, FR France, GB United Kingdom, GR Greece, IE Ireland, IT Italy, LU Luxembourg, MC Monaco, NL Netherlands, PT Portugal, SE Sweden, SI Slovenia, SK Slovakia, TR Turkey, and any other State which is a Contracting State of the European Patent Convention and of the PCT **⊠** EP OAPI Patent: BF Burkina Faso, BJ Benin, CF Central African Republic, CG Congo, CI Côte d'Ivoire, CM Cameroon, GA Gabon, GN Guinea, GQ Equatorial Guinea, GW Guinea-Bissau, ML Mali, MR Mauritania, NE Niger, SN Senegal, TD Chad, TG Togo, and any other State which is a member State of OAPI and a Contracting State of the PCT (if other kind of protection or treatment desired, specify on dotted line Ø OA National Patent (if other kind of protection or treatment desired, specify on dotted line): NZ New Zealand HR Croatia ..... M OM Oman 🛛 AG Antigua and Barbuda **⊠** AL HU Hungary ..... **A** PH Philippines Albania ..... **⊠** ID ☑ PL Poland ... **⋈** AM Indonesia ..... PT Portugal 🛛 АТ ⊠ IL Austria ..... ..... 🔀 RO Romania  $\boxtimes$ ⊠ IN AU Australia ..... India RU Russian Federation .... Ø ΑZ Azerbaijan ..... **⊠** IS Iceland Bosnia and Herzegovina ...... 🛛 JP Ø BA Janan ..... SC Seychelles **⊠** BB **⋈** KE Kenya 🛛 BG Bulgaria ..... 🛛 BR **⊠** KP Democratic People's Republic SE Sweden Brazil ..... of Korea ..... SG Singapore 🛛 BY KR Republic of Korea SK Slovakia ⊠ R7. Belize ..... **⊠** CA Canada X LC Saint Lucia ☑ TJ Tajikistan ...... CH & LI Switzerland and Liechtenstein ☑ CN China ..... LK Sri Lanka **▼** TM Turkmenistan ⊠ co X TN Tunisia Colombia **⊠** LS **▼ TR** Turkey ..... ⊠ CR Lesotho **⊠** LT ⊠ CU Lithuania X TT Trinidad and Tobago Cuba ..... **⊠** cz ⊠ LU Czech Republic ..... Luxembourg **⊠** DE ⊠ LV X TZ United Republic of Tanzania Germany ..... ⊠ DK MA Morocco ☑ UA Ukraine ..... Denmark ..... MD Republic of Moldova ...... UG Uganda ..... 🛛 DM Dominica ..... 🛛 US United States of America Ø DZ. Algeria ..... X MG Madagascar ..... EC Ecuador ..... MK The former Yugoslav Republic of UZ Uzbekistan ..... X EE 図 ES Macedonia ..... **VC** Saint Vincent and the Grenadines 冈 MN Mongolia ☑ VN Viet Nam ..... FI Finland ..... 図 GB United Kingdom MW Malawi XU Yugoslavia ....... X MX Mexico ZA South Africa GD Grenada  $\boxtimes$ GE MZ Mozambique ..... **ZM** Zambia Georgia

Precautionary Designation Statement: In addition to the designations made above, the applicant also makes under Rule 4.9(b) all other designations which would be permitted under the PCT except any designation(s) indicated in the Supplemental Box as being excluded from the scope of this statement. The applicant declares that those additional designations are subject to confirmation and that any designation which is not confirmed before the expiration of 15 months from the priority date is to be regarded as withdrawn by the applicant at the expiration of that time limit. (Confirmation (including fees) must reach the receiving Office within the 15-month time limit.)

NO Norway

Check-boxes below reserved for designating States which have become party to the PCT after issuance of this sheet:

**⊠** GH

Ghana

Sheet No 4							
Box No. VI PRIORITY							
The priority of the following ea	arlier application(s) is hereb	y claimed:					
Filing date	Number of earlier application	Where earlier application is:					
of earlier application (day/month/year)	Of earner approaction	national application: country or Member of WTO	regional application:* regional Office	international application: receiving Office			
item (1) 11 March 2002 11.03.02	60/363,179	us					
item (2)							
item (3)							
item (4)							
item (5)							
Further priority claims ar	re indicated in the Supplemen	ntal Box.					
The receiving Office is request (only if the earlier application Office) identified above as:	sted to prepare and transmin on was filed with the Office	t to the International Bure which for the purposes c	eau a certified copy of this international app	the earlier application(s) olication is the receiving			
all items item (1)	) [ item (2) [	item (3) item (4)	item (5)	other, see Supplemental Box			
* Where the earlier application Industrial Property or one Membe	is an ARIPO application, indic er of the World Trade Organiza	cate at least one country pa tion for which that earlier ap	irty to the Paris Convention opplication was filed (Rule 4	on for the Protection of .10(b)(ii)):			
Choice of International Sear international search, indicate the	rching Authority (ISA) (if	two or more International S	Searching Authorities are	competent to carry out the			
international seurce, maicute me i	Authority chosen, the two-lesses	Coae may ve useaj.					
ISA/ US		that search (if an earlier s		ut by or requested from the			
International Searching Authority) Date (day/month/year)	•	Country (or region		·			
Date (day/monilly year,		• • •	,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,				
Box No. VIII DECLARAT	MONS						
	The following declarations are contained in Boxes Nos. VIII (i) to (v) (mark the applicable check-boxes below and indicate in the right column the number of each type of declaration):  Number of declarations						
Box No. VIII (i)	Declaration as to the identity	y of the inventor		:			
	Declaration as to the applica date, to apply for and be gran		international filing	:			
Box No. VIII (iii) Declaration as to the applicant's entitlement, as at the international filing date, to claim the priority of the earlier application:							

Form PCT/RO/101 (third sheet) (July 2002; reprint January 2003) LegalStar 2003, Form PCTREQ

Box No. VIII (iv)

Box No. VIII (v)

See Notes to the request form

Declaration of inventorship (only for the purposes of the designation of the United States of America)

Declaration as to non-prejudicial disclosures or exceptions to lack of novelty:

Box No. IX CHECK LIST; I UAGE O	FFILING				
This international application contains:  (a) in paper form, the following number of sheets:	This international application is accompanied by the following item(s) (mark the applicable check-boxes below and indicate in right column the number of each item):  1.   fee calculation sheet	Number of items			
request (including declaration sheets) : 66	2. original separate power of attorney	:			
description (excluding	3. original general power of attorney	:			
sequence listings and/or tables related thereto)	4. copy of general power of attorney; reference number,	•			
claims : 5	if any: ;	•			
abstract : 1 drawings : 12	6 priority document(s) identified in Box No. VI as				
drawings : 12 Sub-total number of sheets : 84	item(s):	:			
sequence listings :	(language):	:			
tables related thereto :	8 separate indications concerning deposited microorganism or other biological material				
(for both, actual number of sheets if filed in paper form,	9. Sequence listings in computer readable form (indicate type and number of carriers)	•			
whether or not also filed in computer readable form; see (c) below)	(i) copy submitted for the purposes of international search under Rule 13ter only (and not as part of the internation	12 <b>1</b>			
Total number of sheets : 84	application)	:			
(b) only in computer readable form	(ii) (only where check-box (b)(i) or (c)(i) is marked in left column) additional copies including, where applicable,				
(Section 801(a)(i))	column) additional copies including, where applicable, the copy for the purposes of international search under				
(i) sequence listings (ii) tables related thereto	Rule 13ter	: : copy			
(c) also in computer readable form	(iii) together with relevant statement as to the identity of the or copies with the sequence listings mentioned in left co	olumi :			
(Section 80 (a)(ii)) (i) sequence listings	10. tables in computer readable form related to sequence listin (indicate type and number of carriers)	gs			
(ii) ☐ tables related thereto	(i) Copy submitted for the purposes of international search	under			
Type and number of carriers (diskette, CD-ROM, CD-R or other) on which are contained the	Section 802(b-quater) only (and not as part of the international application)	:			
sequence listings:	<ul> <li>(ii) ☐ (only where check-box (b)(ii) or (c)(ii) is marked in left column) additional copies including, where applicable,</li> </ul>	the			
☐ tables related thereto:	copy for the purposes of international search under Section 802(b-quater) :				
(additional copies to be indicated under items 9(ii) and/or 10(ii), in right column)	(iii) together with relevant statement as to the identity of the or copies with the tables mentioned in left column	copy :			
	11.  other (specify):	. :			
Figure of the drawings which	Language of filing of the				
should accompany the abstract:	international application: English				
Box No. X SIGNATURE OF APPLICANT, A Next to each signature, indicate the name of the person signing at	AGENT OR COMMON REPRESENTATIVE and the capacity in which the person signs (if such capacity is not obvious from reading	the request).			
Di come Ries	Y				
Dianne M. Rees, Ph.D					
L					
	For receiving Office use only	Drawings:			
Date of actual receipt of the purported international application:	1	2. Drawings:			
3. Corrected date of actual receipt due to later by	ıt	received:			
timely received papers or drawings completin purported international application:					
4. Date of timely receipt of the required corrections under PCT Article 11(2):		not received:			
5. International Searching Authority ISA/	6. Transmittal of search copy delayed until search fee is paid				
	For International Bureau use only				
Date of receipt of the record copy by the International Bureau:					

Form PCT/RO/101 (last sheet) (January 2003) LegalStar 2003, Form PCTREQ See Notes to the request form

FEE CALCULATION SHEET	International Application No.						
Annex to the Request							
Applicant's or agent's file reference 56954 PCT	Date stamp of the receiving Office						
Applicant							
President and Fellows of Harvard College							
CALCULATION OF PRESCRIBED FEES							
1. TRANSMITTAL FEE	240.00 T						
2. SEARCH FEE	450.00 S						
International search to be carried out by US							
(If two or more International Searching Authorities are competent to carry out the international search, indicate the name of the Authority which is chosen to carry out the international search.)							
3. INTERNATIONAL FEE Basic Fee							
Where item (b) and/or (c) of Box No. IX apply, enter Sub-total num Where item (b) and (c) of Box No. IX do not apply, enter Total num	<b>&gt;</b> II						
There item (b) and (b) of Don 110. Dr. do not apply,							
first 30 sheets	407.00   b1						
b2 54 x 9.00 =	486.00 b2						
number of sheets fee per sheet in excess of 30	<b>  </b>						
additional component (only if sequence listings and/or tables relative thereto are filed in computer readable form under Section 801(a both in that form and on paper, under Section 801(a)(ii)):	lated )(i), or						
400 x =	<b>b</b> 3						
fee per sheet							
Add amounts entered at b1, b2 and b3 and enter total at B · · ·	893.00 B						
Designation Fees The interactional application contains all designations	<b> </b>						
The international application contains $\frac{\text{all}}{88.00}$ designations.	440.00 D						
number of designation fees amount of designation fee							
payable (maximum 5)	1,333.00						
Add amounts entered at B and D and enter total at I							
(Applicants from certain States are entitled to a reduction of 75% of international fee. Where the applicant is (or all applicants are) so entitled,							
	25.00 P						
4. FEE FOR PRIORITY DOCUMENT (if applicable)							
	2,048.00						
5. TOTAL FEES PAYABLE	TOTAL						
The designation fees are not paid at this time.	JOX						
MODE OF PAYMENT							
authorization to charge postal money order	cash coupons						
deposit account (see below)							
cheque bank draft  AUTHORIZATION TO CHARGE (OR CREDIT) DEPOSIT ACCO	revenue stamps other (specify):						
(This mode of payment may not be available at all receiving Offices)	Receiving Office: RO/ US						
	Deposit Account No.: 04-1105						
Authorization to charge the total fees indicated above.	·						
(This check-box may be marked only if the conditions for deposit	accounts of Date: 11: March 2003						
the receiving Office so permit) Authorization to charge any decredit any overpayment in the total fees indicated above.	Name: Dianne M. Rees, Ph.D.						
Authorization to charge the fee for priority document.  Signature: Drowne Reso							

Form PCT/RO/101 (Annex) (January 2003)

".egalStar 2003, Form PCTREQ

See Notes to the fee calculation she

## TRANSMITTAL LE R TO THE **UNITED STATES RECI**

NG OFFICE

	Date	2	
International	Αp	plit	ے atıر

PTO-1382 (Rev. 4-1995) (Modified)

PCTUS2.FRP /REV03

Attorney Docket No.

56954 PCT

I.		Cert	ification und	ler 37 CFR 1.10 (if ap	plicable)	_	212	Heca Pe	Wrio 1	MAR ZULL
	EL 932685434 US			] •	11 March 2003					
		Express Mail mailing number Date of Deposit								
	I hereby certify that the application/correspondence atta "Express Mail Post Office to Addressee" service under Commissioner for Patents, Washington, D.C. 20231.			ervice under 37	thed hereto is being deposited with the United States Postal Service 7 CFR 1.10 on the date indicated above and is addressed to Assistant				ates Postal Service ddressed to Assistant	
		7	le V	nun Go	1	]	Helen M	urray Tarbi		
			Signature of p	person mailing correspond	lence	<b>j</b>	Тур	ed or printed nam	e of person mai	ling correspondence
II.	New International Application									
1	TI	ΓLE	Detection an	d Quantification of Mod	lified Proteins					est priority date
										y/Month/Year)
į									1	1 March 2002
	SCREENING DISCLOSURE INFORMATION: In order to assist in screening the accompanying international application for purposes of determining whether a license for foreign transmittal should and could be granted and for other purposes, the following information is supplied. (Note: check as many boxes as apply):									
	A.	Ш	The invent	tion disclosed was not	made in the Un	ited States	5.			
	В.		There is no	o prior U.S. application	relating to this	invention	1.			
,	C.	$\boxtimes$		ving prior U.S. applica						
	international application. (NOTE: priority to these applications may or may not be claimed on form PCT/RO/101 (Request) and this listing does not constitute a claim for priority).							m FC1/RO/101		
1		applic	ation no.	60/363,179			filed on	11 March 200	)2	
			ation no.		· · · · · · · · · · · · · · · · · · ·		filed on	<u> </u>		
	D. The present international application is identical contains less subject matter than that found in the prior U application(s) identified in paragraph C.					ound in the prior U.S.				
	E. The present international application contains additional subject matter not found in the prior U.S. application(s) identified in paragraph C. above. The additional subject matter is found on pages 3-8; Figs 2-6; pp 17-30; 44-45;50-53 and DOES NOT ALTER MIGHT BE CONSIDERED TO ALTER the general nature of the invention in a manner which would require the U.S. application to have been made available for inspection by the appropriate defense agencies under 35 U.S.C. 181 and 37 CFR 5.1. See 37 CFR 5.15									
III.		A Re	esponse to an	Invitation from the F	O/US. The fol	llowing de	ocument(s)	is (are) enclosed	<b>d</b> :	
	A.		A Reque	st for An Extension of	Time to File a l	Response				
ì	B.		A Power	of Attorney (General	or Regular)					
,	c.		Replacer	nent pages:						
			pages		of the request	(PCT/RO/	101) p	ages		of the figures
			pages		of the descript	of the description		ages		of the abstract
			pages		of the claims					
i	D.		Submission	n of Priority Documen	s					
			Priority docum	ent			Priority	document		
1	E.		Fees as spe	ecified on attached Fee	Calculation she	et form P	CT/RO/10	annex		
rv.[		A Re	equest for Re	ctification under PCT	91	A Pe	ition	A :	Sequence Lis	ting Diskette
v. [		Othe	er (please spe	cify):						
	****		Applicant	:			Dia	anne M. Rees, f	Ph.D.	
The pering igning orm is	g this		Attomey/.	Agent (Reg. No.)			77	Typed name of sig	gner	
J. 111 15		片	Common	45,281 Representative	Dia	me	Kea	Signature		
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